THE VETERINARY RECORD

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Foot-and-Mouth Disease.

Considering the insidious way in which this disease spreads from an infected centre, the authorities have been very successful in locating it and checking its spread. When the first outbreak was detected Mr. Cope found the disease in an advanced stage—some animals well on the way to recovery. This fact, coupled with the untraced origin, afforded a probability that other herds might be infected. Other herds might have received their infection from the same source as the one first detected, or the disease might have spread from the known centre during the few days in which it existed unrecognised.

Up to February 10th five outbreaks had been reported—all in Norfolk, except one just over the border in Suffolk. These outbreaks, confined to one district, suggest a common source of infection, and we hoped that the thorough precautions taken would prevent further spread. But the country is not yet secure against a further spread of disease. On Feb. 20th foot-and-mouth was reported from another farm in Norfolk close to the infected centres. This is not a serious matter, as it may with probability be traced to the neighbouring outbreaks. More serious is the detection of disease on a farm in Bedfordshire on Feb. 12th. It may be surmised that it was unwittingly carried there by human agency from Norfolk. This is not very comforting, as it may also have been carried to other distant parts in the same manner and from the same place.

The Bedfordshire and Norfolk centres are now most carefully guarded. Responsible and trustworthy veterinary inspectors, with long experience under the Veterinary Department are in charge of each district. They have every assistance, and are not waiting to have disease discovered. They are trying to find it, if it exists, and to trace its origin or spread by every possible means. If no more outbreaks occur within a week we may well anticipate that the disease is under control.

Since the first case was diagnosed the diseased and "in-contact" animals at each outbreak have been slaughtered. This is the way to meet contagious diseases in animals—with boldness and caution.

We shall be sorry to hear that the disease spreads any further. We have the most sincere sympathy with everyone who has suffered from the invasion, but we must honestly confess that the lesson to the Board of Agriculture was worth the cost, There has been a distinct and prolonged attempt by the Board to undervalue the necessity for a proportionate veterinary staff. At present they are too glad to avail themselves of the professional element. The lesson for the Central Authority is—the spread of contagious diseases of animals is constantly to be anticipated and *only trained experts can be relied upon to prevent and control it.*

The A.V.D. and Army Horses.

At the commencement of the war there was a great outcry as to the new fittings, *i.e.*, the doing away with slings on horse transports conveying animals to the Cape, and various folk prophesied all sorts of mishaps and evils that would take place. These were chiefly over-cautious men who had retired from the Army. In *The Times* of 15th February a late Inspector-General of cavalry who had formerly commanded the 17th Lancers, was reported to have condemned these fittings in the ss. Victorian when that regiment was embarking, in an emphatic manner which, we are informed, was habitual to that gallant officer, and as usual it was implied that "The Service is going to the devil sir."

In *The Evening Standard* of the 19th, is an account of the voyage of the ss. Pinemore from Southampton to Queenstown, in which she is described as having met with terrific weather, carrying away a blade of her screw and being obliged to return to Liverpool to repair, but that none of the horses were injured. This, we think, proves that the use of slings is unnecessary, and the new fittings safe if not put up in a scamped fashion, as was the case in the ss. Rapidan, when they broke, and over 150 horses were killed. It also proves that the value of the opinions of retired commanding officers even "ex-Inspectors of cavalry" who are described in *The Times* as being "high authorities" are not worth much when they begin to meddle in matters of which they are ignorant.

We have pointed out before that the use of slings and nitre on board ship, and "physic" and "tonics" for every time a horse looks amiss, and many other things are traditions in the Army, and like most traditions die hard, as to wit "that the only way to treat small-pox in the 17th century was to put the patient into a room with red hangings, a red bed and red bedclothes," and if not done the medical man was guilty of manslaughter. In the 19th century the criminally accused is allowed to give evidence to defend himself, which revolution many eminent judges maintained would prevent all justice if insisted on. We congratulate the Army Veterinary Department in sticking to their guns in the matter of the new fittings, despite the strong pressure that has been brought to bear by "eminent authorities" on the matter.

We notice, however, that two horses have been landed from the Pinemore at Queenstown from pink-eye. The purchase and shipment of horses is not under the control of the Army Veterinary Department, and we have heard some curious stories of the methods of the Army Remount Department, but the A.V.D. cannot be held responsible for the introduc-

tion of disease when horses are put on board ship a few hours before she sails.

We would remind retired cavalry officers of the proverb "Let the cobbler stick to his last." If the Army Veterinary Department were allowed more voice in things relating to horses, particularly their purchase for the Army, it would be of assistance to the taxpayers' pockets. The combatant officer has plenty to do with his own work without interfering and posing as "high authority" on matters he is ignorant about.

CASES AND ARTICLES.

DISLOCATION OF FEMUR—CHLOROFORM AND REDUCTION.

By G. Howe, F.R.C.V.S., Buxton.

On December 10th, 1899, I was called to a cow that was said to have lamed itself by slipping on the ice. I diagnosed the case as dislocation of the hip joint, and told the owner I would try and reduce it, but not having the necessary requisites for the performance of the operation I drove home (a distance of three miles) and procured them.

Diagnosis. The cow was standing, and the dislocated limb (the left one) was a little shorter than the other. It was also hanging slightly in front of the vertical line, with the toe pointing towards the ground. The trochanter major of the femur was much posterior to its proper situation, and the difference could be easily seen by comparing it with the other or right trochanter In cattle in their normal condition, excepting they are very fat, the shaft of the femur can be felt along its course. This is not so in hip dislocation, and the difference can be made out by comparison of the two legs On manipulation I heard a dull grating or rubbing noise, not along the course of the femur, but at the hip joint, produced no doubt by the head of the femur rubbing against the edge of the acetabulum. From the position of the trochanter major, and the direction of the plane of the leg, I considered the head of the femur behind the acetabulum. This I have found to be the usual place when dislocated, although it is liable to shift.

Chloroform, chloroforming apparatus, and a pair of pulley blocks, and having got the assistance of three or four men, I commenced operation. The mode of reduction was as follows: I had the cow laid on her right side, that is with the dislocated leg up, and I then administered chloroform with a nosebag and sponge. By means of a pair of pulley blocks, attached by one end to the fetlock of the dislocated limb, and by the other to a fixed point, I had the leg drawn out at right angles to the plane of the vertebræ. In order that the whole animal may not be drawn away by the force of the traction, a rope attached in an opposite direction and passing between the thighs, is necessary. I then stood behind the cow, passed a pole between the legs, made the ground a fulcrum, and lifted the femur into its place. This it did with a crack, which was a sigral for the man at the pulleys to let go.

After manipulating to ascertain if all was right, I took the chloroform nosebag off, and gave instructions to have the cow's nose held up so that she might have as much fresh air as possible, and that she must not on any account be made to get up, but allowed to do so herself. This is, I think, a very important matter, as the muscular system is in a relaxed state and dislocation is easily brought about again. There are one or two more little points which I have noticed in cases that I have seen: firstly, when the animal is lying on its sternum the dislocated limb is stretched very much out from the body, and secondly when the animal is lying on its side (as when you are going to perform the operation), the dislocated limb is poised horizontally in the air, and is shorter than its fellow, but immediately reduction is performed it falls to the ground.

I returned to see my case the following day and found she was doing nicely—had not dislocated it again.

My object in recording this case for the benefit of your readers, is to draw attention to the use of chloroform in dislocations such as this. It is next to an impossibility to reduce a dislocated hip without its use, as the antagonistic force of the gluteal and other powerful muscles attaching the femur to the pelvis is great. The majority of veterinary surgeons have the subjects of such cases slaughtered, but we have in chloroform an agent which renders the operation easy, with credit to the performer, and without much pecuniary loss o the owner.

ERYSIPELAS.

By E. Wallis Hoare, F.R.C.V.S.

Under the above heading I intend to make a few remarks, on an interesting disease of which a good many cases have come under my notice. The majority of these cases were affected in the fore-leg, generally in the fore-arm, extending to the knee, and also to the metacarpal region, and no wounds, etc., were present.

The clinical history presents certain characteristics that are fairly constant. The swelling of the limb comes on rather suddenly, and without any apparent cause. It is acutely painful, and pits on pressure, and either the knee or the elbow joints are involved in the disease. There is marked constitutional disturbance, a high temperature, a rapid pulse and accelerated respirations. The lameness is generally excessive, and the pain very acute.

In the last case that came under my observation the tissues around the elbow joint were very much swollen, and also the entire fore-arm, and the animal could not bear any weight on the limb, in fact at first sight it looked like a case of fractured elbow.

If the case progresses unfavourably, suppuration occurs and abscesses form along the course of the limb; there is marked disintegration of muscular tissue, and a thin fœtid pus is discharged. The skin sloughs in parts, and in severe cases the pus bur-

rows deeply and the tendons, and even the bone may become exposed. The extensive sloughing of the skin and underlying structures is one of the marked features of the disease. And, finally, every tissue of the limb loses its vitality, and the patient dies of irritative fever or general septicæmia.

I cannot assert that one class of horse is more liable to the affection than others, or that surrounding influences have any perceptible effect in producing it, as it may occur under a variety of conditions.

With reference to treatment, experience teaches that hot fomentations tend to favour the occurrence of suppuration and hence should be avoided. The application of belladonna and glycerine gives favourable results; the part should then be wrapped in a layer of cotton wool and bandaged. If the pain is very acute, I have found it of great advantage to soak the cotton wool in a lotion of liq. plumbi di-acet. and belladonna and keep it constantly moist with this lotion.

Internal treatment is of the greatest importance; the first indication being to administer a purgative. If the pain be severe small doses of tincture of aconite give relief. The chlorate of potash administered twice daily gives good results.

If suppuration occurs then the sooner the knife is resorted to the better. Care is necessary as the tissues lose their tone and if a bloodvessel be wounded it is very difficult to restrain hæmorrhage. Free drainage must be given, and the part thoroughly irrigated with antiseptic solutions, and afterwards packed with antiseptic gauze. In cases where sloughing has occurred, a dressing of equal parts of boric acid and iodoform is useful after the parts have been thoroughly cleansed.

In my experience the worst cases were those in which hot fomentations etc. were constantly applied, and needless to say the water is often applied too hot in many instances, causing still further destruction of tissue.

PURPURA, WITH AN UNUSUAL CLINICAL HISTORY.

The subject was a harness cob. On November 23rd he was suffering from an uncomplicated attack of influenza of a mild form, the temperature averaging 103°. On November 28th, swellings characteristic of purpura appeared on the hind legs, and on the sternum. On the neck, flanks, and abdomen a sudden rash appeared, resembling that of urticaria; the elevations on the skin were of variable size and very tender to the touch. There were marked petechial spots on the nasal mucous membrane, characteristic of purpura, and the nostrils and lips commenced to swell.

Briefly the clinical course of the disease was as follows: sudden disappearance of the eruption on the skin, and its reappearance without any warning, fresh crops being suddenly developed. The petechial spots in the nasal mucous membrane frequently changed their character, at one time being dark coloured, and at another becoming bright scarlet coloured and coalescing, forming large patches. The swellings were also very erratic in their development and in their situation. The course of the disease extended to January 4th, when the symptoms had just disappeared. At times the appearance of the surface of the body was very peculiar in consequence of the diffuse character of the eruption. There were no symptoms of soreness of the throat at any time.

The treatment adopted was the administration of ol. tereb. with milk and eggs for the first few days, and the chlorate of potash was prescribed while the symptoms lasted.

ABSTRACTS FROM FOREIGN JOURNALS.

LARGE WOUND ON FETLOCK; OPEN JOINT; COMPLETE DIVISION OF THE EXTENSOR PEDIS TENDON: RAPID RECOVERY.—By E. MARK, V.S. of Differdange, Luxemburg.

The following case appears to show that complete division of the extensor pedis tendon is not such a dangerous accident as is generally supposed, that it plays a somewhat subordinate part in the motion of the limb, and that wounds of the articulations will heal rapidly under antiseptic treatment without the necessity of absolutely preventing all motion in the part.

A yearling colt, while playing in a farmyard fell on a plough share, inflicting on the right hind fetlock a wound 4 inches long in a direction from above downwards, and from within outwards, commencing at the front of the joint and terminating about an inch above the hoof. The wound was clean incised and the extensor pedis tendon was completely divided obliquely. The fetlock joint was open for about 1½ inches.

As the colt was valuable, the wound recently inflicted, and the power of standing and moving were not interfered with, it was well washed with Van Swienten's liquid, the ends of the divided tendon brought together by two separate stitches and the external wound sutured; an antiseptic dressing was applied. The limb was carefully bathed three times a day with Van Swieten's fluid.

Eight days after the accident a cicatrix had commenced to form and the colt was allowed to move round his box. The case was discharged cured on the 45th day after the accident.—(From (*Recueil de Médecine Vétérinaire*, Feb. 15th, 1900).

JOSHUA A. NUNN, Vet.-Major.

NOTE.—The case appears worthy of notice in conjunction with the interesting paper read before the Central Veterinary Medical Society on Feb. 1st, 1900, by Mr. W. Perryman, on "Common Injuries to the Distal Extremities.

Liquor Van Swieten is largely used in France. Its composition, according to Bouchardat and Vignardou, *Formulaire Vétérinaire*, is rectified spirit 100, distilled water 900, corrosive sublimate 1 part.—J. A. N.

VETERINARY SOCIETIES.

THE CENTRAL VETERINARY MEDICAL SOCIETY.

An ordinary general meeting was held at the Royal College of Veterinary Surgeons, 10 Red Lion Square, on Thursday, February 1st, 1900, Mr. Matthew Clarke, president, occupying the chair. There were present:—Messrs. A. L. Butters, W. F. Barrett, W. Hunting, Prof. Hobday, W. L. Harrison, A. A. Johnson, H. MacCormack, Major Nunn, W. Perryman, A. Prudames, W. Reekie, J. Rowe, F. Samson, S. H. Slocock, W. A. Stainton, E. L. Stroud, G. Upton, S. Villar, F. O. L. Walpole, H. H. Whitlamsmith, F. W. Wragg, and one visitor.

The PRESIDENT announced that Mr. W. S. Mulvey had gone to the front with the Imperial Volunteers, and that Mr. E. L. Stroud had been elected secretary in his place.

Mr. Stroud returned thanks for the honour which had been done him.

The minutes of the last meeting were taken as read.

The SECRETARY announced the receipt of a telegram from Mr. Wheatley regretting his inability to attend the meeting, and also a letter from Mr. Craft, of Reading, tendering his resignation.

On the motion of Mr. Prudames, the resignation of Mr. Craft was accepted with regret.

INJURIES TO THE DISTAL EXTREMITIES.

By W. PERRYMAN, M.R.C.V.S.

Mr. President and Gentlemen,—The subject I have chosen is one which probably engages the attention of the town practitioner more than any other. Three-fourths of our cases have to do with disease of the extremities, the ratio being gradually increased from the shoulder downwards. I do not propose treating of all the diseases and injuries of the limbs, the subject being too vast, many diseased conditions being each of them sufficient to furnish an exhaustive paper. My object to-night is to bring before your notice the commoner injuries and their sequences as affecting the limb from the fetlock downward.

THE FETLOCK.

Injuries here generally arise from direct violence to the parts produced by the animal itself, occurring more often on the inner side, due to the animal striking the limb with the opposite foot. It may be due to awkward gait, projecting shoe or clip, but generally to weakness and want of condition. The anterior part of the joint is most commonly injured by falling or knuckling over. Lameness is evidenced by the usual symptoms of inflammation—excessive pain on pressure, heat and swelling. Pain is generally more acute when injury has taken place on the inner side, no doubt due to the proximity of the nerve.

Treatment. Should be directed to relieve pain. I, myself, prefer heat. Some practitioners I know favour cold. The former I consider more lasting and soothing to the patient, and favours effusion from the congested vssels. A plan I frequently adopt is to have a stocking made of sacking slipped over the foot and down round the fetlock, and well packed with hot bran. Frequent applications of warm water poured into the top will keep the parts in a state of fomentation for hours. Should a wound exist antiseptics should be used. If an abscess should form due to the injury, I consider it advisable to open as soon as possible, and so avert any destruction of the skin.

I have noticed, and upon this I should particularly like to have the experience of members present, that wounds of the fetlock, especially those at the anterior part, when a large portion of tissue has been removed, are very tardy healing; frequently instead of closing up the wound apparently gets larger, a great granulating surface existing which has little if any tendency to contract. The first case or two I saw do this rather astonished me; I could not assign a cause. I have now come to the conclusion that it is due to repeated injuries when the animal lies down. Horses with wounds at the front of the joint should not be allowed to lie down; they are better slung.

Extensive wounds at the anterior part of the joint rather high up, are frequently attended with a flow of synovia, due to injury of the bursa here situated. These cases are best treated with cold applications, astringents and antiseptic treatment is usually successful. True open joint of the fetlock I consider hopeless.

When speaking of antiseptic treatment, I might state now the course I generally adopt, so as to avoid repetition. I do not wish to advocate any one agent above another; most have their own particular fancy. Whatever drug is used it is imperative that we ensure thoroughness; if this be neglected the best and most costly preparation will fail to achieve the desired effect. Our nurses are generally of the roughest, and fail to comprehend the importance of cleanliness. We can all call to mind instances where we have asked the horse-keeper to wash a wound. He looks round the yard—he hasn't a sponge or clean linen—espies a dirty sack and at once proceeds to cut a portion off to wash our wound. His hands are generally dirty. If this happens when we are present, we can infer it is common when we are away. To obviate this difficulty I always supply a bottle of strong solution of zinc chloride (Burnett's fluid) 200 gr. to fluid oz. with directions to use a certain proportion in the fomenting water. This is a most efficient antiseptic, it commends itself for cheapness and is easily dispensed. In the case of wounds to the lower part of the extremities all the wound and surrounding skin can be made thoroughly aseptic, in addition to the attendant's hands and washing utensils coming under the same treatment. Further dressings can be used as dry applications such as boracic acid, zinc oxide with starch, iodoform and starch, or any agent deemed desirable. I have adopted this measure for some years now, not only for wounds of the extremities, but for most on other parts of the body. I can claim several cases of healing by first intention.

INJURY TO THE PASTERN.

This can be divided into two heads: (1) injury with wound; (2) injury without wound. The former when of the nature of simple cuts calls for no special mention. When associated with damage to the bone more importance attaches to it. The most common form of injury is by being run over. This is generally of a serious nature. Lameness is generally acute, and the effects often very serious.

Generally when we are called to attend the patient little or no history is obtainable, the driver of the animal frequently repudiating all knowledge. If any information is forthcoming, it is often likely to involve litigation. We should be guarded as to our opinions. If it is a question of receiving compensation I think it is our duty to point out to him the advisability of waiting until the case has advanced; many apparently small injuries through being run over leave permanent lameness, due to severe periosteal injury or fracture of the bone, ringbone being the sequel.

When first seen, a simple abrasion may only exist, or the hair giving the appearance of having been shaved off above, ending inferiorly in a wound, the lips of the wound forming more or less a pocket. The nearer to the coronet the wound the more serious the consequences,

owing to the extremity of the bone widening and thus offering greater liability to fracture.

Treatment. Hot applications, either as water or hot bran packed round the limb, antiseptics for the wound, followed by blisters and turn out to grass. I think the latter very essential; although the animal may go sound, the concussion on the stones is likely to bring on lameness and ringbone. Give the animal as long a rest as possible.

Injury to the pastern without wound is generally due to severe concussion, causing longitudinal fracture. This is perhaps not so frequent in town as in the country. When we get them in London they are of the simple form, difficult to diagnose. The animal giving all the indications of suppuration of the foot, yet without any appreciable heat. In two cases I jumped at a hasty conclusion on seeing the horse come out of the stable, and sent for the farrier feeling sure I should find pus. Closer manipulation revealed excessive tenderness over the fracture. The pastern bone produced was a case I was able to localise quickly, and as the animal was a "tubed" horse I had no difficulty in persuading the owner to kill at once, although he had himself treated the animal for a week for shoulder lameness. That was a weakness of the owner.

The horse was brought home sound. Found next morning unable to put the limb to the ground.

Treatment I consider useless; in the majority of cases it is economy to have the horse slaughtered at once. I do not agree with breeding from animals that have defects due to injuries.

Treads.

Injuries to the pastern and coronet are very common, they vary from the slightest to the most severe cases we have to deal with. They are generally described as treads. Many are so, but I think more are the result of bruising of the skin, by the animal knuckling over, and subsequent sloughing of the parts. No doubt in cold and snowy weather some are due to the effects of salt and snow, and in dirty weather to the unwholesome use of washing of the legs. I think some have a septic origin through small wounds on the skin. All are characterised by excessive lameness. In many cases the animal is unable to put the foot to the ground; sometimes only just the toe is used. When the limb is moved the horse generally jerks the legs upwards and backwards. A portion of skin at first appears greyish or black, the skin round the margin being very sensitive; subsequently a yellowish coagulable pus exudes, with separation round the edges of the slough. When the portion of dead skin is removed, lameness abates, and a granulating wound remains which is not difficult to treat. Should the injured parts extend to the coronary band or to the inside of the hoof we have a difficult case to deal with; open joint might supervene and the case become hopeless; or the slough being firmly fixed inside the hoof recourse must be had to the knife, a portion of the wall having to be removed. Every case needs to be treated on its merits. When paring at the coronet is needed, and time permits, do not trust to the farrier, as delicate cutting is here needed. They frequently use the knife roughly; it is better to do it yourself. Hot fomentations and linseed meal poultices I believe give best relief. Irritative fever is generally well marked. I think febrifuges with tr. aconite in drinking water very beneficial.

Occasionally a so-called tread progresses favourably for ten days or a fortnight, granulation taking place and the wound filling up rapidly; then suddenly the animal becomes very lame again. The wound should now be carefully examined, when a small hole can generally be found, often indicated by a mere speck of pus exuding after the wound has been washed and the patient made to walk a few yards. Cases of this class I look upon as having received fresh injury, or owing to the vitality becoming impaired a further portion of tissue at the most internal part of the wound has again become necrotic. Often where I have seen this happen granulation had been carried on very rapidly. I find in these cases it is the best plan to syringe the sinus with a caustic, HgCl. or ZnCl., which generally has the desired effect of removing the offending tissue and with it the lameness.

Before leaving this part of my subject, I should like to mention a very important factor in producing treads proper. I refer to horses affected with itchy legs. Animals so affected are continually cutting the legs, in addition to the annoyance of constantly stamping and the difficulty in shoeing them. It is a curable complaint, being due to parasitic presence—symbiotes equi. I find a dressing composed of Ol. picis, Ol. ter. and sol. staphisagria when properly applied speedily puts an end to the trouble. Owners are pleased, and never begrudge paying for the abatement of the nuisance. Precaution here is better than cure.

Injuries to the Foot.

The majority of these are produced in shoeing—pricks and binds; others by picking up foreign bodies, or by treading on the shoe when it has become loose and shifted its position. A prick is when through accident or neglect the nail has pierced the sensitive foot.

A bind is when the nail has been driven too near, causing pressure on the sensitive laminæ. The latter I always consider more serious, for unless the shoe is speedily removed and the inflammatory action subdued, the sequel is generally more trouble. Suppuration is more tardy and when it does take place is situated higher and consequently more difficult to get at, and owing to the outpouring taking place between the horny and sensitive laminæ, a greater tendency exists to emerge from the coronet. Prick is near the base of the hoof, and by paring the foot pus is more readily released.

Treatment. Remove the shoe, locate the injury and remove the horn; this I believe in doing freely. I have never yet seen the economy in just digging a hole, especially if pain is very acute. In the case of binds I generally rare well up on the inside of the wall, in fact try to bottom the injury. The cases we get are those which have existed some few days and the farrier has failed to afford relief. Suppuration has taken place, and is often out at the coronet. Should this more serious condition of affairs exist, after paring as I have described, with a quittor syringe I endeavour to wash through– not often an easy matter, owing to the extreme sensitiveness of the parts. If successful, I seldom anticipate a serious quittor. I use strong zinc chloride lotion. The reason for the strong dressing is that I view the condition of many of these cases as similar to a sitfast, the structures (laminæ) are highly damaged, hypersensitive, and in the end the case will terminate in death. I have frequently been astonished after one or two successful dressings to find the animal free from acute pain, evidenced by placing the foot more firmly on the ground, and less sensitive to touch. When I have my patient in this state, I have a three-quarter bar shoe put on, the portion absent over the region of the injury, this facilitates the syringing and removes all pressure from the parts, weak lotion is used.

In the most aggravated cases, and where severe swelling has taken place all round the coronet, I think further surgical treatment advisable. I have had some of the worst possible cases relieved by cutting right through the wall, or by paring the sole and bar thin, and cutting through at the bulb of the heel. If we consider that severe inflammation has taken place within a closed box, and that one of the ordinary conditions of

inflammation (swelling) is prevented by the unyielding nature of the horn, any elasticity we can give must lessen pain.

I have just had a splendid recovery after cutting through the wall, the swelling of the coronet overlapped the foot all the way round and the animal in great pain (hind leg), unable to put the foot to the ground; I feared a fatal termination. The relief given was remarkable and the case proceeded rapidly. I find in cases of this description the horn has generally grown well over the parts by the time the original wound has healed, in fact the reproductive power in these cases, owing to the supply of blood being increased by the congestion, more rapidly than in ordinary life.

Injury to the Sole and Frog.

Generally takes place through the picking up of nails, treading on loose shoe, the clip or nail penetrating the foot. In all I advocate a free use of the paring knife, hot fomentations, and poultices. In the majority of cases this treatment is sufficient to restore the animal to soundness in a few days.

Occasionally we have to deal with more serious cases where nails have penetrated deeply, I refer to injury in the region of the navicular. Whenever a nail has been picked up about midway in the commissure I consider we ought always to advise rest, whether the animal is seriously lame or not. I have several cases on record where a nail has been pulled out of the foot and the horse has worked three or four days before acute lameness has set in. Suppuration then commences, followed in a few days by a flow of synovia, and finally a fatal result. In cases of this description one has to infer that after withdrawal of the foreign body the soft structures close over the wound, owing to friction entailed by work; inflammation is set up, sloughing of damaged tissue takes place and often navicular bursa. Possibly septic infection plays an important part. I have tried all manner of treatment with the same result—hot and cold applications, poultice, and dry dressing. If kept long enough suppuration and sloughing takes place all round the coronet.

Injuries due to the clip are very painful and troublesome, if near the periphery of the sole, a portion of the pedal bone may ultimately become detached. To encourage suppuration with linseed meal poultices and hot fomentation, and so hasten the removal of any slough, I think you will agree as being imperative.

Corn.

As generally met with I do not purpose treating of at any length. The usual farrier's remedy—pare and poultice—is generally sufficient.

A more serious injury to the heel (mostly inside) and to which I will apply the term "acute corn" to differentiate it from the ordinary or "chronic," will need further notice. Lameness usually comes on very suddenly, pain intense, the animal able to bear little or no weight on the limb, when he does the fetlock is "shot" (the expression of the owner or attendant inferring that the animal has had the fetlock dislocated). Little or no pus exists and fails to make its appearance for several days. More often we get swelling and separation at the coronet, with pus there, before it makes its appearance at the bottom of the foot. This condition of the foot I view as the most frequent cause of quittor.

Cause. Essentially carelessness either on the part of the owner, not having the shoes removed soon enough, or the farrier failing to cut out loose flakes of horn when the animal was last shod. These become firmly wedged beneath the shoe and act as foreign bodies. On removing the shoe the foot is so sensitive that the animal cannot bear the foot lightly tapped, not even to have the horn cut out. The effect of this pressure is to cause severe bruising to the soft structures beneath, a portion becoming necrotic, and owing to its fibrous nature slow in becoming detached; when it does, often a small piece of the ala of the pedal bone comes with it, or a portion works out a few days after. The slough is generally green.

Treatment. Remove horn from the heel as much and as quickly as possible; if separation at the coronet has taken place I take the wall as well, and so remove the tension from the injured part. I have found that nothing gives quicker relief than to plug the heel with Hg. Cl. It has the desired effect of hastening the removal of the intending slough. When this is accomplished drainage from the bottom is secured, and consequently less damage to the coronary band. After this fomentation with weak antiseptic lotion is generally all that is required. I consider the best shoe after this trouble is the three-quarter or bar shoe.

Sandcrack.

A splitting of the horn fibres due to mal-nutrition and brittleness, or the result of previous injury to the coronary band. We are here called upon more often to advise how to keep the animal so affected at work and prevent his going lame, than to treat actual lameness, although they are by no means uncommon cases.

The first thing is to direct attention to the shoeing. All weight to be removed by cutting a portion of the wall away. Clips each side of the crack, and where I can get it done the foot bound round with tar and tape; over the whole a boot to be worn. The form of boot I think preferable is one having a broad tongue to overlap the crack, with the strap sewn across the front. Greater pressure can be brought to bear on the parts than when the strap is fixed to the two edges of the shield. I consider this a very important detail. Many wide sandcracks can be brought much closer together and the animal kept working, which without this aid are constantly falling lame.

Wood plugging I have never tried. Clamps I have found a failure. Nails driven through a great success, but in London one seldom finds a farrier competent to do it. In the North (Lancashire) I have seen farriers quite experts at nailing sandcracks.

When lameness does exist, fomentation and poultices, and if there is suppuration, removal of horn must be resorted to. I always endeavour to effect this at the bottom of the foot by cutting up at the toe on the inside of the wall. Some cases must be opened at the front. If any indications of an abscess exist at the coronet I have used an ordinary blister with the best possible results. Sandcrack I consider essentially a town disease, due to concussion on the stones. Those due to coronary injury grow much closer together in the country, those due to brittleness disappear.

Quittor.

A running wound at the coronet connected with a sinus, running downwards to a necrotic portion of tissues.

Causes. Any injury to the foot, causing death of structure, whether laminæ, cartilage, or bone. If precedence be given to one cause more than another, that which I have described as "acute corn" is more frequent than any other. Injuries to the coronet by brushing are a common cause and supply us with many of the most difficult to cure; the injury is so readily repeated. Outside quittor is easier to treat, and the nearer the heel the better. Lameness is generally present, the degree being in ratio to the depth of structures involved.

Treatment must be directed to the removal of a firmly adherent portion of diseased tissue. Many of the simpler forms of quittor can be cured, if the sinus is not too deep, by injections of HgCl. and Zn. Cl., plugging with mercury and arsenic, opening the sinus with the bistoury or the firing iron. Whatever means is adopted the end is to remove dead or diseased tissue. Drainage

is important, get a depending orifice. Where success has not been attended by the simpler methods by injection, recourse must be had to the knife. The removal of large portions of the foot are attended with great success the reparative powers being remarkable. The course I adopt is to have the foot well poulticed before operating so as to soften the horn for cutting. When the animal is cast, apply a strong tourniquet, this is absolutely imperative, otherwise the operator is unable to proceed satisfactorily owing to the quantity of blood. When tightly fixed after the first minute or two after incision the vessels drain of their venous contents and leave the foot almost white.

Pare the horn quite thin from the coronet to the base over the region to be operated upon, insert a probe in the sinus, and with bistoury or scapel remove a portion of the wall and laminæ. As a rule a lamina or portion of one, firmly attached to the podophyllous structure beneath, stands out in great contrast to the others by being perfectly green. This is to be carefully removed, making sure none is left attached to the structures beneath. Generally a tract of flesh much darker in colour is seen, perhaps extending to the lateral cartilage, this I always remove, making sure I have nothing but healthy tissue left. It is frequently found the lateral cartilage is diseased, the whole or portions being of a greenish hue. I have also seen the cartilage quite detached from the pedal bone so as to be able to insert the finger beneath; in cases of this description the whole must be removed. I have found a very small searcher knife as useful as anything for this purpose. I have also had occasion to pare the pedal bone.

The last quittor I operated upon I removed all structures until the ligament of the pedal joint was exposed. The wound healed splendidly and the foot has grown almost intact, but unfortunately the horse cannot trot sound.

When operating it is advisable to press well round the foot and watch for any small speck of pus. I have found transverse sinuses running towards the anterior part of the foot. After operation the parts are to be thoroughly washed antiseptically; in addition I dust over the wound with zinc oxide powder, and fill the wound up with antiseptic tow, firmly pressed in and bandaged over. Remove tourniquet and allow the horse to rise. Hæmorrhage at once sets in. I find it a good plan after a few minutes to apply the tourniquet again to control the hæmorrhage, clotting round the wound soon takes place and the pressure can be removed.

The after treatment consists of keeping the wound antiseptic. Pressure in the form of tow pads I like, the granulations appear firmer, less spongy. If the operation is successful the animal soon loses all lameness, and the enlargement at the coronet begins to subside. This latter I consider the best sign of quittor, whatever method of treatment is being adopted. Pus should only be over the granulating surface and not flow from any one channel, and should be free from tinge of blood. After washing the wound and allowing the animal to walk a few yards, no further specks of pus should make their appearance. If they do it is a bad sign, further operative interference is generally required.

The reproduction of horn in these cases is astonishing, taking into consideration the structures removed. After granulation the sides of the wound gradually grow together, causing very little breach in the horny box. Sandcrack results more often when extensive sloughing of the coronary band has been the primary injury, than from surgical treatment, if properly carried out.

I have given you, gentlemen, my observations and treatment which I have now carried out for the last twelve years. It now devolves upon you to give yours, so that all may mutually be benefitted.

Discussion.

Mr. Villar said there was one frequent cause of lameness which was characterised by heat and some little swelling which one was accustomed to put down to jar. He believed that simple jar was a frequent cause of fetlock lameness, of course of a temporary nature. A rather uncommon condition was a dropsical enlargement of the bursa situated between the tendon and the bone which was very difficult to cure. He had treated it by pressure, by blistering and by insertion of seton but had never attained real success. He endorsed the essayist's remarks as to caution being necessary in giving opinions as to the amount of injury resulting from being run over by cart-wheels. It was no doubt the case that a very small injury often developed into a very serious matter, perhaps ringbone and exostosis, and also sloughing of the skin and subcutaneous tissue. He doubted whether fracture of the pastern was more frequent in country than in town. It was well worth a veterinary surgeon's while to go over the premises of Messrs. Harrison and Barber, slaughterers in York Road, and see their collection of split pasterns—simple fractures of the suffraginis bone, fractures at the upper parts and at the lower parts running at an acute angle, and fractures in in almost every direction. They were all heel fractures. With regard to the example which had been handed round, he ventured to think that if the animal had been allowed to live he would have recovered from the fracture, although he saw that it involved both articular surfaces. He could not understand why the essayist would not breed from animals which had deformities as the result of injuries; it was very rare indeed that the result of injuries were conveyed to offspring. He lived in a suburb where a considerable number of foals were bred from mares which had come to town with all sorts of injuries, but he could not call to mind any case where an acquired deformity had been transferred from the dam to her foal. He did not gather whether the essayist considered that puncture of the navicular bursa was necessarily incurable. He thought that a very small percentage of those cases recovered, or ever became useful again for working puposes. The author stated that it was not at all unusual for the foot to separate the whole way round the coronet, but he had also known separation to break out in the hollow of the heel—an abscess well formed and deeply seated, and the pus would escape from the hollow of the heel. He had never seen such a case recover.

Mr. Butters agreed with the essayist that wounds on the front of the fetlocks were difficult to treat; they were most difficult perhaps in heavy animals which did not lie down in the stable, because they fell asleep and fell down on their fetlock and kept constantly bruising them. In those cases they generally put on a sort of sleeping boot in the stable at night and kept the stall well bedded down in the front. He agreed the best plan when they were troublesome was either to sling them or tie them up so that they could not lie down, and when they were beginning to recover put them in a loose box thickly bedded with peat. The collection of fractures of the pastern to be seen at Messrs. Harrison and Barber's was unique; the fractures were not of the longitudinal character so common in the country in which the ridge in the joint seemed to act like a wedge, but they were split transversely across. Most of them appeared, from the extensive exostosis, to have been more or less under treatment. He had carefully watched post-mortems where he expected to find injuries of that nature, but he had failed to find any where he could obtain a history of fractures of the pastern in transverse direction. As to the treatment of sandcrack he agreed it was somewhat difficult to get farriers to put nails through, and for a long time he had adopted the method of boring a hole

with a very small drill. In that way there was very little difficulty in getting the nail through safely without injuring the laminæ.

Mr. BARRETT congratulated Mr. Perryman upon his paper. He was afraid there had been some reluctance on the part of young members to bring forward papers, partly owing to the fact that one or two of the older members criticised very honestly and openly, but very severely. He was surprised to hear the author say that a true open fetlock joint was never curable; that was an opinion which, at any rate, was not received by the majority of the members of the profession. He had seen cases completely recover, in which the true hock joint had been open He was glad to hear the author advocate the use of chloride of zinc in regard to wounds; in practice he had used it almost exclusively. There was no dressing equal to Burnett's fluid. The ordinary price charged was 3s. 6d. per gallon, but he had procured it from the Tuson Disinfecting Company for 1s. 10d. per per gallon. It really gave a splendid dressing, and the wounds would heal almost without suppuration. He was equally surprised to hear the essayist say that in case of fractured pastern the horse ought to be destroyed. He had seen at least 20 horses which had made perfect recoveries although no doubt it took some time. Most recovered in 7 or 8 weeks, and in the majority of cases no lameness would ensue. With regard to poulticing, he had been taught at College to poultice continually, and every case was subjected to a long course of poulticing. As a result suppuration was favoured, the granulations were rendered weak and flabby, and the case was protracted. He did not believe in poulticing, especially for corns. The great thing in the treatment of corns was to remove the diseased or dead tissues, giving free vent to any discharges which might collect there, and then treat the wounds antiseptically. He was of opinion that, except for the relief of pain, specially hot fomentations were not to be commended. In the treatment of wounds generally they ought to look more especially to antiseptics. He looked upon that as the sheet anchor of their success. It was very difficult to get healing by first intention, but if the antiseptic was applied sufficiently strong, sufficiently often, and sufficiently well, the wounds healed with remarkable rapidity and gave very great satisfaction. With regard to the condition of which Mr. Villar spoke, he had seen many such cases. The proper treatment he thought was by puncture under aseptic conditions. Care must be taken that no germs entered the wound and then there would be no suppuration, no inflammation, and by the application of pressure to the limb the horse would make a perfect recovery. As to the treatment of quittor, he did not believe in poulticing except for the purpose of softening with a view to operation. In those cases also it was very essential that the dead tissues should be removed. In the specimen which Mr. Perryman had sent round he understood him to say that the fracture had existed about a week. If that was so it was very surprising that there was not more evidence of inflammatory exudation. The fracture extended entirely through the longitudinal direction of the bone from joint to joint, and it was rather curious that more deposit had not been thrown out, and that nature had not made a greater effort to cure. He thought perhaps if Mr. Perryman had not been called in, in six or seven weeks the animal might have been made useful again. He saw no reason why it should have been slaughtered, assuming that it was of sufficient value to warrant the expense of treatment.

Mr. W. HUNTING said that the author had asked why a wound in front of the fetlock healed so badly. He thought it was owing to the movement of the joint, to the small amount of tissue, skin, and tendon there, and also to the fact that as a rule the injury was done either by a passing cart or by a fall which ground into the tissues and lacerated them to a large extent. Mr. Shaw's collection at Harrison and Barber's had been got together in a few weeks. According to Mr. Shaw's observation the fracture of the large and small pastern bone was extremely common and nearly all of them were old united fractures. Mr. Willis had been working on the same subject quite independently of Mr. Shaw and had found a number of those perfectly united fractures. No doubt they caused lameness and it was equally probable that very few of them were diagnosed. He was inclined to think that many of the lamenesses which were diagnosed as foot-diseases, as sprains, and as splints were fractures of the large or small pastern bones. He mentioned a case in which he had unnerved a horse where the horse had not got sound afterwards. They tried a run at grass and then he was brought again back to town. His advice then was to pole-axe him and he was pole-axed. It was found he had a chip fracture of the upper end of the large pastern, as though it had been struck with a hammer. There was not a trace of any enlargement, pain, heat, or swelling to lead one to diagnose the injury to the fetlock. Mr. Perrymen said: "Kill at once for fracture of pastern." He thought that as a rule that advice was right, and if one were treating a large stud of horses one might make it a rule. But there were cases such as breeding mares and the like, which might be saved. He remembered being shown by Admiral Houston a carriage horse which had a fracture of both pasterns and made a perfect recovery after two years. As to Mr. Barrett's remarks that the specimen showed very little attempted repair after a week's existence he had seen cases which must have been in existence a long time with no signs of repair at all. He agreed with Mr. Perrymen as to the inadvisability of giving a hasty opinion in case of injury to the coronet, that "it would be all right in a week or two." He was inclined to think that no time should be fixed. Pus within the hoof required to be treated on regular surgical principles. Like Mr. Barrett, he entirely disagreed with the prolonged use of poultices. Half the swelling about the coronet was due to the poulticing which some of these injuries received. The best treatment was the use of antiseptics; in fact no treatment without the use of antiseptics was of any use at all. With regard to sandcracks he asked the author whether they occurred in the toe of the hind foot simply from the concussion or pressure of the horse's foot, or did it require some disease of the horn or the coronet to start it. He thought there must be some injury to the coronet. In the treatment of sandcracks he did not say the modern veterinary surgeon, but men of his own standing, had often done a great deal more harm than good. One would see a sandcrack 20 or 30 years ago treated by being cut out when there was no suppuration at all. As long as there was no suppuration there was no reason for cutting out a sandcrack. The best method of treatment was to bind the foot. If it had been once cut out in an irregular manner it ought to be plugged. South's method of plugging with wood was perhaps the best, and use either the French clip or nails. As a London practitioner he was not inclined to think that the farrier was such a unhandy and unskilful man in London as Mr. Perryman suggested; in most of the west end shops one could find a good man.

Mr. F. G. SAMSON disagreed with the author with regard to the treatment of open fetlock joint. He put the animal in slings, and generally put a splint on the limb, so as to keep the joint as quiet as possible. He preferred to treat an open fetlock joint to an open hock joint or an open elbow joint. His experience was that the use of bi-chloride of mercury caused the animal a great deal of pain for the first 24 hours. There were plenty of caustics which did not cause that pain. He had never tried the nail for the treatment of sandcrack, but had met with success by using the French clips.

Mr. UPTON said that Burnett's fluid was a very good antiseptic, but most people wanted something which smarted and smelt. He thought that carbolic acid was a very fair antiseptic; he had used it in the form of soluble phenol with very great success. Exercise in many cases of lameness was very beneficial. He had come to the conclusion that horse stamping was due to the presence of the oxyuris curvula in the rectum. He did not believe in so much poulticing; he thought the foot should be well cut out. The modern farrier did not cut it out enough; he put his tar in before he had cut it out, and got suppuration under the horn. Corns, in his opinion, were due to gradual contraction of the heels, rather than to bad shoeing. Bichloride of mercury, used as it was in veterinary practice, was dangerous. He thought that exercise was the great thing in the treatment of quittor.

Mr. WRAGG was sorry to hear Mr. Barrett's remark that criticism had deterred the younger members of the Society from introducing papers, and hoped that that was a mistake. It was the greatest compliment to an author for his paper to be criticised. He thought the worst quittors were usually caused from treads; next suppurating corns. He disliked the quittor at the point of the heel very much. He had tried all kinds of treatment. Formerly he did not mind what or where he cut as long as he got to the bottom of the sinus, but he had not operated in that way now for some time, he injected them. He did not mind quittors a bit, but what he did dislike was canker. They often got treads and a great slough from the front pastern, which left a very large round wound which took a very long while to heal. Very often in cart horses the cicatrix formed into a horny growth, and looked very ugly. With regard to sandcracks, he always cut them, and used South's plug. He was certain that was the best treatment. It was preferable to French clips and nails, because it raised the horn, and kept it from pressing on the laminæ, which was the cause of so much pain. He did not put the plug in at once, but had the sandcrack cut out, so that the hoof would take the plug, and waited till the horn got sound. Of course sandcrack would not always begin to grow down sound at the coronet, and in that case the horn must be cut away right up to the coronet. That should be continued till it did grow down sound. Sandcracks, especially on the toe of the hind foot, were generally caused by a slit which tore away the fibres of the horn. As to fractured pastern, where the articulatory surfaces were affected it generally left lameness. His experience was that where one got fractured pasterns there was generally lightness of the bone, a deficiency in earthy material. Fracture of the pedal bone was a disease which it was impossible for any man, however great his experience, to do more than gaze at. Mr. Villar had spoken of bursal enlargement on the top of the fetlock joint, and in the fore-limb. He had seen that more often in the hind limb. It was very unsightly, but he had never found one which caused lameness. It generally occurred in young horses. It was best to leave it alone, and keep the horse at work. Mr. Barrett had spoken about puncturing the bursa, he was glad to hear with good results, but he (Mr. Wragg) did not like anything approaching to a discharge of synovia from a wound.

Mr. VILLAR said he put setons through the enlargements.

Mr. BARRETT said that that of course gave more risk of inflammation.

Mr. SLOCOCK said with regard to the injuries of the fetlock joint, there was a very frequent enlargement of the joint caused by stable injury, the horse falling against the manger or on the loose-box door. As to the wound on the anterior part of the fetlock being troublesome to heal, he believed the refusal of the horse to keep the leg at rest was really the greatest cause. One speaker had mentioned splints. He had adopted a case for the leg, by taking a piece of thick sheet lead and moulding it to the back of the joint. It could be moulded under the back of the fetlock, and the bottom flanges put under the coronet, and with a bandage one could fix the fetlock entirely. He disagreed with the author that it was greater economy to kill horses suffering from fracture. He knew for a fact that young colts in a paddock often suffered from fracture of the pastern. He believed if one went through the various training stables one would find many cases of split pastern. The horse would run again in six months' time. As to exercise, it was impossible to keep a horse from exercise. It would fidget the injured limb in the stable, and exercise that limb if he exercised no other. To that exercise he attributed the fact that they got such good cases of permanent recovery from those injuries, and thought exercise might well be adopted in human surgery, preventing the patient being lame afterwards. In cases of injury there was nothing like a hot fomentation to relieve at least the acute pain. Once that pain was relieved he believed in cold fomentation. In the treatment of wounds generally everybody admitted that the use of antiseptics was correct. He believed more harm than good was done by poulticing and hot fomentation. There was a form of lameness in the fetlock which Mr. Villar had mentioned as arising from jar; he did not believe that that lameness existed except in rare cases, namely cases where one saw a horse with upright pastern. With regard to injuries of the foot, he advocated the use of the anti-tetanus serum, which he believed was very useful in many cases in warding off tetanus.

Major NUNN agreed with the essayist that wounds on the front fetlock were aggravated by motion. He had an enormous number of those to treat in hot climates, where the heat affected them. Their moving the leg to keep the flies away had kept up the irritation. When arrangements could be made to keep the flies off, the rapidity with which the wound healed was most marked. The essayist had also made a remark about the difficulty of getting wounds in the feet clean, he never used a piece of cloth for a wound, he always used a douche. A very convenient one could be made with a couple of yards of ordinary indiarubber pipe on the mouth of an ordinary tin kettle. That was as good as the irrigating apparatus which was sold for 15s. or a sovereign. He would ask the essayist if he had ever noticed any evil results in those wounds healing up in the front fetlock from adhesion of the scar or cicatrix. He thought that he himself had, but had not sufficient data on which to give an opinion. He could not agree with the essayist as to the inadvisability of breeding from injured animals. He had had some thousands under his observation belonging to natives of India; they never used their animals for breeding purposes until they were useless for everything else, and some of the injuries were really most extraordinary and appalling, both in sires and dams. He was not referring to the actual value or quality of the progeny, but he merely wished to say that he had never seen the injury transmitted to the offspring. In paring off the overhanging horn, the loose horn, the essayist mentioned that he used a small drawing knife. He had found that a very handy instrument was the French right and left handed drawing knife—a small one, made very narrow in the blade. The essayist mentioned that sandcrack was a disease of the town, not of the country. He presumed he meant in England, for he had seen some of the very worst cases in desert places, 100 miles from a habitation. He had abandoned the practice of poulticing feet long ago. With regard to the relief of pain, he much preferred packing the part in Indian cotton waste, and if there was a wound, using a hot antiseptic solution to keep the heat in the steam. As to the difficulty of diagnosis of the amount of injury done to a horse in being run over, he had had that very forcibly brought home to

him two years ago. A horse was run over by an Army Service Corps waggon ; the injury looked very small indeed, and he gave an opinion accordingly. When he saw the horse again a month afterwards, to his disgust there was an enormous ringbone, and the animal was pretty nearly useless. He was asked the usual official thing, how it was that he had made the mistake, and he had given the usual answer, that he had made hundreds of mistakes in his life, and hoped to live long enough to make hundreds more.

Mr. PERRYMAN, in reply, thanked the members for their reception, of his paper. He had seen the dropsical condition at the front of the fetlock, but could not say he had ever had to treat it as a lame case. He had advised about it, and he generally left it alone. He had been asked to puncture it, but always refused. He thought the best treatment, if any were adopted, was pressure and cold applications. The reason he had stated that sandcrack was more frequent in town than in country was that he had on several occasions sent horses to friends in the country which were useless in town ; they had worked them, and had done nothing to the cracks, and they had worked perfectly. It was probably due to mal-nutrition of the horn, but it was difficult to say its exact nature—he would not like to compromise himself—what that was, but it was probably due to defect of the interstitial cement between the horn fibre. The reason that it was usually in the hind leg was because more direct and forcible violence was brought to bear on the toe. Most of the speakers had misconstrued his statement respecting the fracture of the pastern. He did not say that the horse was absolutely useless, many came right in time, but he said it was greater economy to kill ; unless the horse was very valuable there was no good in keeping it. He certainly did not agree that they would come right in six weeks or two months ; he had never seen them come right under four or five months, and then there was always a certain amount of lameness As to the case which he had handed round to the members, he could not see how it was possible for an an animal with a fracture of that sort not to be lame ; they must get anchylosis of both joints. He had a case at the present time, he believed, of fracture of the coronæ bone ; the animal worked in London four years, and was never lame before. The result was a ringbone, which came up very suddenly. He fired it, blistered it, and turned it out to grass, and now it worked at night. That was about all it would do. He had made the statement in the paper as to the inadvisability of breeding from animals with injuries for the purpose of raising a discussion. He thought it was very questionable, in many of the cases of split pastern, whether there was not some intrinsic trouble of the bone, whether they had sufficiently compact tissue, and whether the bone was not liable to fracture. He thought there must be some peculiarity about heredity because he himself had a bent little finger following parental defect due to accident, and his little girl had a bent little toe. He believed there were cases on record where the progeny had had some peculiar twist of the limb, where there had been a malformation after an injury to the parent. As to there being a greater number of fractures proportionately in the country than in town, of course it would be a much easier matter to get a collection of pasterns in town than in the country, and it was a question whether the majority of horses which Mr. Hunting had spoken of did not come up from the country. In answer to Mr. Barrett as to open joint, he thought it was a very doubtful thing. He had never seen the fetlock joint, nor the hock joint when opened get better. He was always very chary of his opinion when a person said they had open joint ; in many cases it was simply the bursal sheath. He very much doubted whether true open joint ever came right again. He had watched cases and made post-mortems to see the result, and found erosion of the cartilage and extensive inflammation all round the joints. He knew that many disagreed as to the amount of poulticing, but he personally used a fair amount of it, in many cases as a matter of policy to keep the wound clean. He frequently used dry bran for the purpose, and always supplied a liberal amount of antiseptic lotion. As to the poulticing of quittor, he thought some speakers had argued as though he advised a continuance of the poultice. He had only advocated the poultice for softening the horn ; the main point was to get out the necrosed tissue. He thought that French clips were an utter failure ; as a rule they got loose after a few weeks, dropped out, and had to be replaced. He agreed with Mr. Samson as to the bichloride of mercury. For the first few hours it certainly gave the animal pain, but when plugging the foot with bichloride of mercury, it was always policy to see it at as short an interval as possible, and cut off the coagulation. He liked to do it over-night, and go again in the morning if he could. He would like to give Mr. Upton a hint or two. He never sent out lotion colourless, and if smell were required he would advise the use of one of the volatile oils : one drop made a tremendous smell. As to cutting up the sandcrack, it was good practice to try and get up from the bottom. One could very often give relief rapidly that way, and the sole forming quickly again one saved a certain amount of horn. Of course if it were extremely near to the coronet, one could not let any pus out from there. As to the jar which Mr. Villar had referred to, he considered that was more a case of general ostitis with young animals. Mr. Slocock had made reference to the injuries to the fetlock in the stable causing an enlargement ; he supposed he meant enlargement at the top of the suffraginis bone, what was called "cab-horse lameness," on the inner side of the pastern. As to exercise in cases of lameness, that was well illustrated in London, especially during the summer season. He always told his clients that they got 80 per cent. better cures in the summer in firing and blistering than in the winter, for the reason that they could turn the animals out to grass. He had not used anti-tetanic serum for any cases of foot lameness ; he was afraid that would be a very expensive item. It was a good hint from Major Nunn, that of washing wounds with a piece of hose pipe on an ordinary kettle. He had seen adhesion to the front due to injuries to the anterior part of the joint. He had a case at that time in slings, where the tendon was perfectly exposed. He thought at first he was going to have open joint, but thought that now it would come through. As soon as the animal was capable of moving, he was going to have him exercised to break down the adhesions. With regard to the searching knife, he had had knives cutting with both edges, and that was certainly a great advantage, especially cutting near the coronet.

On the motion of Mr. Barrett, seconded by Mr. Reekie, a vote of thanks was passed to Mr. Perryman for his paper.

Mr. PERRYMAN having briefly returned thanks, a vote of thanks to the Chairman, proposed by Mr. Wragg, terminated the proceedings.

ROYAL VETERINARY COLLEGE V.M.A.

The 286th ordinary general meeting was held on Friday, Jan. 26th, at 6.30 p.m. Mr. J. Chalmers in the chair. Forty members were present.

The minutes of the last meeting were read and confirmed.

Mr. C. TYLER delivered an essay on "Bovine Tuberculosis," attracting the attention of his audience throughout.

Mr. J. A. DIXON opened the discussion in which the

following members took part, Messrs. Chalmers, Sampson, Aitchison, Aldred, Paine, Webb, Boyd, Robarbs, and Jethiji.

Hearty votes of thanks to Essayist and Chairman terminated the proceedings.

The 287th meeting was held on Friday, February 2nd at 6·30 p.m. Mr. F. W. Robards in the chair. The President, Messrs. McIlvenna and Rix, M.R.C.V.S, and 28 members were present.

The minutes of the last meeting were read and confirmed.

By the kindness of Mr. C. H. Delacherois. M.R.C.V.S., Bristol, the President exhibited a specimen of strongylus tetracanthus, and by the courtesy of Mr. F. W. Lloyd, Finsbury Park, a mouse with ringworm Votes of thanks were passed to these gentlemen.

Mr. AITCHISON delivered an essay on "Dispensing" dealing from an expert's point of view with the details of the subject.

The discussion was opened by the President, and the following gentlemen took part, Messrs. Tyler, Whitemore, Sampson, Aldred, and Chalmers, the discussion being prolonged for an extra half hour.

Hearty votes of thanks to Essayist and Chairman terminated the proceedings.

JOHN HOBDAY, *Assist. Sec.*

EXTRACTS AND NOTES.

THE ORIGIN OF SEX.

In a paper read at the Intercolonial Medical Congress at Brisbane in September, 1899, Dr. A. F. Davenport brought forward a number of observations in support of the theory that the sex of the child is determined at the moment of conception and is the opposite to that of whichever parent is at that time in relatively the most vigorous health. He has carried out experiments upon dogs in which by depressing the health of one parent and elevating that of the other he has succeeded in obtaining results which he regards as evidence in favour of his view as to the origin of sex and the power we possess of controlling it. He has also carried out his mode of treatment in the case of 39 families and states that he has succeeded in obtaining children of the sex desired in no less than 32 cases, while in four of the unsuccessful cases no pregnancy followed, leaving only three cases to be reckoned as complete failures. Dr. Davenport considers that Schenck's theory may be taken as directly substantiating his own. He would regard the mother affected with glycosuria as the less healthy parent and therefore only capable of giving birth to female children, since, as he contends, the sex of the child is the opposite to that of whichever parent is in relatively the most vigorous health. The number of theories as to the origin of sex is legion and the one under consideration is but a modification of Stackweather's, "that the sex is determined by the superior parent." As has been pointed out by many writers, if we are to accept any theory of the origin of sex it must be one capable of explaining such well-established facts as the preponderance of male births in Europe, of females amongst mulattoes and other hybrid races, of females amongst polygamous animals, and of the equality of the sexes amongst other animals. If we attempt an explanation of even the first of these facts by Dr. Davenport's hypothesis we must at once acknowledge the superiority of the female parent. Stackweather points out the difficulty of proving female inferiority, but at the same time there are few if any writers who attempt to prove female superiority, and Darwin's theory of sexual selection involves superiority in the male sex and entailed upon that sex. Dr. Davenport brings forward the fact of the excess of male births after a war as being due to the more enfeebling effect of war upon men than upon women; but it has been conclusively shown, and, indeed, this is the only result that can be regarded as proven, that good nutrition produces a preponderance of females, and it is much more likely that the excess of male births after a war, or an epidemic such as cholera, is due to the want of food and general malnutrition than to physical inferiority upon the part of the fathers. Similar facts have been shown by Düsing to hold good in the case of animals. Thus if food be abundant there is an increase in the number of females, and therefore a further increase in the number of individuals of the species, while if food be scarce a larger number of males are produced and the number of the species tends to diminish. Dr. Davenport also quotes Thury's view than an ovum fertilised soon after its liberation tends to produce a female while if fertilised later produces a male. He concludes without any exact evidence, so far as we can see, that a woman is habitually weakened by menstruation and therefore when impregnated soon afterwards is the inferior parent and likely to bear a female child. In the face of our modern knowledge with regard to the relation of ovulation to menstruation Thury's theory can no longer be sustained, as it is quite impossible to tell at what period of time any ovum becomes fertilised. Dr. Davenport's results are certainly striking and it is a pity that he has not increased their value by giving them in greater detail. Similar results have been obtained by the breeders of livestock; thus it is a well-recognised fact that an ill-fed cow is likely to produce a female to a well-fed bull and *vice versa*. We fear, however, that if the method of producing children of any desired sex by influencing the health of the father and of the mother be tried in a large number of cases the numerous exceptions will tend to show that the physical superiority or inferiority of one or other parent is but one of the very many factors that are involved in the complex question of the origin of sex. —*The Lancet.*

CRUELTY TO A BAY MARE.

At the Harlesden Petty Sessions on the 18th ultimo, Mr. R. Ward, a baker of Willesden, was charged with cruelty in causing a bay mare to be worked whilst in an unfit state, and his driver was also charged for working the same.

Mr. W. Freeman Barrett (instructed by Mr. Allen Hope, solicitor, of Willesden) appeared for the defence.

It transpired during the course of the case that the owner had several times been previously convicted, on the last occasion, but a week before, being fined £5 and costs.

Mr. R. Hollis, the inspector of the R.S.P.C.A., said from information received he examined the animal which he saw in a baker's cart, it was very lame on the off hind limb, had contracted tendons and a spavin, and was unfit for work. The animal was suffering a good deal of pain, lifting first one hind leg up and then the other. He examined the fore legs and found that it was suffering from a corn on the off fore foot.

Cross-examined by Mr. Barrett: You stopped the horse on the 16th because it was lame behind?—Yes. You noticed no lameness in front?—No. In reply to further questions the officer admitted it was going very well this morning although only two days had elapsed and no professional aid had been obtained. He thought the mare had a corn on the off fore limb, but if Mr. Sydney Villar said it was the near fore he should believe him. Asked as to signs of inflammation or tenderness

he admitted that there were none, and was surprised that the mare was not lame this morning. Pressed as to whether an animal could become fit for work in two days if it were very lame, the officer admitted that it was unlikely.

Police Inspector Horrod corroborated.

Mr. Sydney Villar, F.R.C.V.S., for the defence, stated that he had just examined the animal and was of opinion it was fit for work. There was slight contraction of the tendons, but no evidence of pain or inflammation. He failed to detect spavin. He said the animal had a corn in the near fore foot, but not in the off fore.

Mr. Williamson, M.R.C.V.S., corroborated Mr. Villar.

The magistrates retired to see the animal, and upon returning into court said "we are of opinion that there has been no cruelty in this case" and dismissed both the charges.

THE CAUSE OF MALARIAL FEVER.

The fevers collectively termed malarial, which range from what was not uncommon in certain parts of England fifty years ago, under the name of "ague," to the malignant and rapidly fatal forms met with in the tropics, have constituted, perhaps, the chief impediment to the colonization by Europeans of many countries which in other respects appeared to be admirably adapted to undergo development under the influence of civilised immigrants. In some of these countries the native races are at least partially free from liability to the disease; but, even when this is the case, and it is by no means universal, they are generally of low type and of depressed vitality. Vast regions of Africa have long been regarded as almost necessarily fatal to white races; millions of acres in India are left without cultivation; and even Europe itself has been desolated over considerable portions of its surface. The Italian Campagna, so fertile and populous under the dominion of the Romans, has in modern times been reduced by malaria to an arid waste almost destitute of human inhabitants; and Wellington's army, when in Estremadura, was assailed with such severity as to threaten its very existence.

It had long been known that any continued prevalence of malarial fever was attended by the occurrence of extensive changes, apparently of a degenerative character, in the physical condition of the blood; and these changes when they were made the subjects of investigation by the aid of modern microscopes, were traced to the presence of parasites as invariable concomitants of the disease.

Malarial fevers are characterised by definite exacerbations and intermissions; and it soon became apparent that these were severally coincident, in point of time, with successive stages of the life history of the parasite, each attack of fever denoting the hatching of a new brood, and presenting the successive stages of shivering, of heat, and of sweating, coincidently with their growth and development, at the conclusion of which each corpuscle which had been invaded by them perished, and its function as a carrier of oxygen to the tissues was abolished. Unlike the now familiar vegetable parasites collectively called microbes, by which so many other diseases are occasioned, the parasite of malaria belongs to the animal kingdom; but, like the microbes, its numbers increase with amazing rapidity. Until they reach to a considerable amount, the parasite would not be productive of serious symptoms; but, by the time that an attack of fever is fairly established, these numbers often amount to something like two hundred and fifty millions, and thence would range upwards to a billion. It had long been known that quinine was the most potent of all remedies for ague; and its administration at all sorts of times and in all sorts of doses had gradually led to the experimental determination of the conditions of its greatest efficacy; but, prior to the discovery of the parasite, it was regarded as being essentially "anti-periodic" in its effects, that is to say, as exerting some mysterious influence in preventing the rhythmical recurrence of morbid phenomena. The discovery of the parasite led to the further discovery that quinine cured ague simply by poisoning the parasite; and that it was most effective for this purpose when given in such doses and in such a way as to be present in the blood in sufficient quantity during a certain period of their growth. But it seldom killed them all, and more usually left a few individuals, perhaps more or less languishing, but still living and reproducing their kind, and capable of giving rise to a fresh attack of fever, even after the lapse of many months.

The next stage in the investigation was to ascertain through what channel the malaria parasite became introduced into the human body; and Dr. Patrick Manson, who had previously traced another form of infection to the mosquito, was, we believe, the first to suggest that this insect was the most probable delinquent. The investigations of Major Ross, finally established the correctness of the hypothesis. The particular mosquito concerned is of the species known to naturalists as Anopheles, and the evidence of the crime is complete. He, or rather she, for the ladies of the family are the sole offenders, is furnished with salivary glands which secrete the poison which she injects into her bites. A female may be hatched from a captured larva, and fed for the first time by being permitted to bite a man suffering from fever. She will swallow one or more of the parasites or their spores as part of her meal, and, if kept in confinement, their life within her body may be observed. They ultimately find their way from her stomach to her salivary glands, and from these are injected with the poison into the blood of the next victim whom she may select or may be furnished with. The process can be watched from beginning to end, and it constitutes a chain of morbid action of the most interesting and curious character, which, at the same time, completely clears up the whole question of the nature and causation of the fever. All speculations about air, about soil, about "malaria belts" and the like have been rendered obsolete. There is no reason to believe that the parasite finds access to the human body through any other channel, or that the "gnats" or "mosquitoes" which infest regions free from malaria are examples of Anopheles. If this particular insect could be extirpated there is every justification for the hope that malarious fevers would disappear from the earth; and, fortunately, the extirpation does not seem likely to present any insurmountable difficulty. The eggs are laid in water, and the larvæ, when hatched, live in water for about a week before they assume the mosquito form. As larvæ, like those of the common gnat, they rise to the surface of the water to breathe; and a film of oil on this surface is speedily fatal to them, by blocking up their air spiracles. The fully formed mosquito lives for many weeks, but is not presumed to travel far, and probably always obtains its food within easy reach of its native pool of water, to which it periodically returns for the purpose of depositing its eggs. Much may be done, therefore, by drying up the pools in the vicinity of houses, or by treating them once a week with a film of kerosene oil. Much may be done also by killing the mature insect when resting upon a wall after its meal.—*The Times.*

THE APPLICATION OF BACTERIOLOGY TO PUBLIC HEALTH.

A meeting of the Society of Medical Officers of Health was held on Jan. 12th, Dr. A. Newsholme, the President, being in the chair.

Mr. WALTER PAKES read a paper on the Application of Bacteriology to Public Health. This, he said, had already resolved itself into two branches, the pathological and the technical, each demanding long study and practice; indeed, there was no department of research in which a little knowledge was so dangerous a thing or so prone to lead to the grossest errors. He felt this very strongly in connection with the bacteriological examination of water, milk, and even of pathological secretions by the public analysts, who, though rightly required to be highly qualified chemists, if not Fellows or Associates of the Institute of Chemistry, are not required to have the knowledge and training essential to the exercise of functions which, if not committed to professed bacteriologists, should be jealously retained by the medical officer of health. This officer if he had undergone a course of laboratory instruction, might easily become an adept in the examinations required for purposes of public health. These examinations were—(1) diagnostic and (2) preventive. Perhaps the most important of the former was the identification of the tubercle bacillus in milk, the more so since it appeared to acquire greater virulence in the bovine organism, and infants were far more susceptible than adults. With proper precautions as to the complete decolourising of the tissues or the milk residue, it could be identified with certainty and distinguished even from the smegma bacillus which most nearly resembles it both in appearance and in its behaviour towards stains, and had been found in the sputa, urine and milk. Mr. Pakes described the precautions to be observed in taking samples of these secretions and of fæces, and the details of a modification of the Ziehl-Nielsen and Honsell's staining processes. Next in importance was the diagnosis of diphtheria. He had examined the secretions from nearly 3,000 sore throats, of which 1,836 during the last five years had been systematically examined for the different microbes, with results which he exhibited in tabular form. The Klebs-Löffler had been found alone in 289 and associated with Hoffmann's in 18, and with strepto- or staphylo-cocci in 36, making 343 of true diphtheria, Hoffmann's alone in 89, and with cocci in 13, strepto- or staphylo-cocci or both in 339, while the rest showed other forms or none. Hoffmann's gave rise to an infectious and specific sore-throat, and the so-called "septic throats" were caused by streptococci, differing morphologically from those present in health, and by staphylococci, especially staphylococcus aureus, which as well as the saccharomyces albicans produced a membranous exudation indistinguishable clinically from that of true diphtheria. He gave examples of the value of bacteriological examination in verifying and in correcting clinical diagnosis whether positive or negative, and explained the circumstances under which the Klebs-Löffler bacillus, though present in the throat, might fail to appear in the cultures. He believed that whatever the cost of the bacteriological examination of every "sore throat" among school children, it would, as a means of preventing outbreaks of diphtheria, effect a saving of public expenditure as well as of lives. More difficult was the detection of the Eberth-Gaffky or typhoid bacillus; to look for it in the blood was useless, and in the urine it appeared far too late for diagnostic purposes. It was present in the spleen and Peyer's glands from the first, but these were inaccessible. In the fæces it might be found late in the second week, but only when set free by ulceration, and then its isolation from the bacillus coli communis was beset with difficulties as yet well nigh insuperable. In all cases in which the diagnosis during life had been doubtful the splenic pulp should as soon as possible after death be examined by cultures and by the so-called Widal's test. He felt it a duty he owed to his master, Gruber, to state that the credit of the discovery of this test was really due to him, that he had suggested its employment in the diagnosis of enteric fever and cholera, whereas all that Widal did was to diagnose enteric fever during life by the application of Gruber's reaction. Mr. Pakes then described at considerable length the procedure as practised at Guy's Hospital, the cultures, dilutions of the serum to various degrees, and the conclusions to be drawn from the occurrence or absence of a reaction with each at successive stages in the course of the disease. One remarkable observation was that there were cases of undoubted enteric fever in which the organism made no attempt to combat the disease, and for that very reason the patient's serum failed to react. With these rare exceptions Gruber's test was almost conclusive even when opposed to the clinical diagnosis, for which the precaution of successive observations the error due to the patient having been immunised by a previous attack might be avoided. Preventive examinations were quantitative or qualitative. In the quantitative examination of water, which was essentially a comparative observation, it was of the utmost importance that all the conditions of collection, media, inoculation and plating, temperature and periods of incubation, and the mode of enumeration should be identical. These he explained at great length, indicating at each step the most frequent causes of discrepancies and errors, some of which had received little if any attention. Thus in very foul waters insufficient dilution led to almost incredible under-estimation of the numbers of the bacteria, the stronger colonies saturating the gelatin around with toxins fatal to other and weaker forms in their vicinity. Thus, having made two dilutions of a sewage effluent of 1 in 10 and 1 in 1000 respectively the means of several plate cultures of each gave estimates of 386,000 and 4,600,000 to the cubic centimetre, or nearly 12 times as many in the case where there had been a hundredfold dilution The sample should be packed in ice until the incubation had begun, and the enumeration made on the third day, the temperature giving the most valuable results being 20° C. Pathogenic germs, however, grew best at 37° C., the temperature of the blood, but they and others flourishing at the same temperature were usually as 1 to 10, 15 or 20 of those thriving at 20° C., and relatively less numerous as the total numbers were greater. Discussing the qualitative examination he referred to the inadequacy of most descriptions of bacteria for their identification and enumerated the points that he felt requisite for a complete definition. The organism that in this country was most desired to identify in water was that of typhoid fever, but this was very rarely possible, it being necessarily associated with numerous intestinal bacteria, especially the bacillus coli communis, which was not only far more numerous and stronger, but yielded a toxin extremely fatal to that of enteric fever. None of the procedures hitherto adopted for their separation were satisfactory. He then explained his own method based on the facts that practically none but the Eberth-Gaffky, the bacillus coli, and the bacillus enteritidis of Gaertner would grow at 42°C. and anaerobically. He used Kitasato's glucose formate broth and Buchner's tubes incubated at 42°C. for 24, 48, and 72 hours, transplanting any growths to Petri's dishes at 20°C. The water to be examined he concentrated to 1-200th of its volume by filtration through a "bougie" from within outwards under a pressure of three atmospheres. He thus found in the 300 samples of water examined 50 per cent. of them to contain bacillus coli. The quantity of water operated upon

varied from 200 cubic centimetres to as little as 20 cubic centimetres, the smallest volume of the same waters yielding colonies under the carbolic process having been at least 600 cubic centimetres. It was futile to look for, or at any rate to rely on, the possible but improbable detection of the typhoid bacillus, but the bacillus coli was synonymous with sewage, although almost ubiquitous. For practical purposes water containing it in 20 cubic centimetres or less should be condemned, in quantities between 20 and 50 cubic centimetres deemed highly, and in those between 50 and 100 cubic centimetres slightly, suspicious. Only when still larger volumes were required could a water be pronounced probably safe, or if none could be found in the two litres used absolutely so. He would not depreciate chemical analysis, but if bacteriology could not demonstrate previous contamination by organic matter, long since completely transformed into nitrates, chemistry could not differentiate between infective and inert organic matter, or even between sewage and vegetable matter. He had found the bacillus coli in every five cubic centimetres of a water which yielded only 0·004 part of albuminoid ammonia and used up only 0·02 part of oxygen per 100,000, in which when on a previous occasion these figures had been 0·003 and 0·01 respectively there were no bacilli coli found when 50 cubic centimetres of water were examined. The examination of milk was attended by special difficulties; the bacteria varied under circumstances from a few scores hundreds, or thousands to 30,000,000 per cubic centimetre, London milk usually containiug from 3,000,000 to 4,000,000. It therefore required dilutions from 1 in 10 to 1 in 1000, as did sewage. Then as a product of the living body it was very apt to contain organisms like the streptococci thriving at 37° C., but easily crowded out at 20° C., while for sterilising he found neither Pasteurising at 65° C. nor exposure to 100° C. for ten minutes sufficient, undiluted milk requiring half an hour's boiling, and milk with an equal volume of water a like exposure to a temperature of 80° C. Centrifugalisation of the milk in stoppered tubes was indispensable, and the cream and the sediment should be spread separately on cover-slips, dried, flamed, stained, and examined, the removal of every trace of fat being imperative, especially in the application of the Ziehl-Nielsen process for the detection of tubercle bacilli. Failure to demonstrate these, certainly in the case of mixed dairy milks, had no more value than other negative evidence. The streptococcus of bovine mastitis was often found, of course accompanied by numerous pus cells and leucocytes; and though a few leucocytes were always present and the streptococcus had not been certainly proved to be pathogenic to man, yet milk the product of an inflamed udder, the sediment from which had been taken by a pathologist for pus from a psoas abscess, was not fit for human, much less for infants', food. He would put the limit at a dozen or so leucocytes in the field of a one sixth objective. Inoculation experiments on guinea-pigs were always desirable in doubtful or negative cases, but the sediment used should first be submitted to a temperature of 56° C. for 10 minutes by which means certain organisms often present and speedily fatal to guinea-pigs were rendered innocuous. The bacilli of enteric fever and of diphtheria might be introduced from without; the latter might be detected in cultures on inspissated blood serum, but the search for the Eberth-Gaffky was even more hopeless in milk than in water, while the bacillus coli was almost always present. He concluded with a few remarks on ice-creams, the examination of which was the same as that of milk, though the enormous numbers of the bacteria made extreme dilution imperative. But though from 20,000,000 to 30,000,000 might be present the effect of boiling the milk, often done to prevent souring, must not be forgotten. He had himself, with no other precaution than this, made from milk containing 4,000,000 bacteria per cubic centimetre ice-creams with only 1000.—*The Lancet.*

FOOT-AND-MOUTH DISEASE IN EGYPT.

This disease appeared in Egypt in 1888 immediately after some cases had been detected among the imported cattle in the Alexandria quarantine pens. Since 1888 the disease never occured again until July, 1899, when cattle-trade with Russia was re-established, the earliest cases being found in the Behara province near the port of Alexandria, where the foreign cattle were imported. Energetic measures stamped out the disease before the close of December, but during the five months more than 70 separate outbreaks were reported and 3000 head of cattle were isolated. It was found that animals placed out in the open air under slight shelter recovered quicker than those in stables, the microbes being apparently killed by exposure to sun. No cases were traced to human beings, though several children were known to have drunk unboiled milk from diseased cows.—*The Lancet.*

Fooling with Tuberculin.

That veracious half-penny paper *The Daily Mail* contained the following paragraph :—

COSTLY TUBERCULIN TEST.

The Eccles (Lancashire) Corporation recently decided to apply a tuberculin test to thirty milch cows on their sewage farm. Alderman Mellor, chairman of the Farm Committee, last night stated that the consequent loss amounted to over £500 per annum, the decreased milk yield £227, and decreased value of the cattle £315. A member of the committee declared the test to be a fad, while another said the Corporation's management would mean bankruptcy to a private farmer. An investigation of the results of tuberculin testing was ordered."

The amount of harm done by lying stupidity of this kind is incalculable. According to this statement the tuberculin test to thirty cows caused a loss of milk to the extent of £227 and injured the animals to the further amount of £315. The person who supplied the newspaper with these figures ought to be prosecuted, and the Eccles Corporation would lose no dignity by correcting such an absurd statement. Unless the thirty cows were of extraordinary value this one test caused more loss than the whole herd was worth. If we add the direct expenses of testing it would have paid the corporation better to have slaughtered the lot and buried them—which is absurd.

ARMY VETERINARY DEPARTMENT.

From the *London Gazette*, Friday, Feb. 9:

WAR OFFICE, PALL MALL, Feb. 20.

THE IMPERIAL YEOMANRY.

To be Veterinary-Lieutenant: Veterinary-Captain J. Rowe, Dorset Yeomanry; E. A. L. Fenner, gent., M.R.C.V.S.

RETURN OF VETERINARY OFFICERS AND C.V.S. IN NATAL UP TO DATE, 27TH. JANUARY.

Vet.-Majors
Gladstone, 1st Royal Dragoons, Colenso—Tugela.
Smith, F., 13th Hussars, Colenso—Tugela.
Rutherford, S.V.O. L. of C., Maritzburg.
Vet.-Capts.
Larnder, Royal Field Artillery, Colenso—Tugela
O'Donell, 14th Hussars, Colenso—Tugela.
Vet.-Lieuts.
Williams, Remount Depôt, Mooi R.
Durrant, " " "
Cochrane, Sick Horse Depôt, Fort Napier.
Houston, Ammunition Column, Colenso—Tugela.
Vet.-Surgeons
Lowe, Sick Horse Depôt, Fort Napier, Maritzburg.
Knott, " " " " "
Kenny " " " " "
Hulseberg, " Cavalry Depot Camp, Mooi R. "
Quinlan, Remount Depot, Mooi R.
Carless, " " "
Woollatt, " " Estcourt.
Sharpe, " " "
Dalgleish, Transport Comp. Frere.
Verney, Thorneycroft's Mtd. Inf., Frere.

VETERINARY OFFICERS IN LADYSMITH. — Vet.-Colonel Matthews, Vet.-Capts. Raymond, Newsome, Vet.-Lieuts. Wilson, Bartlett, Harris and Tatam.
Vet.-Lieut. Shore, Prisoner in Pretoria.

Mr. Pakeman posted to Naauwport.
Vet.-Captain Lawson to Remount Depot, Naauwport, newly formed.
Mr. Fowler transferred from Port Elizabeth to 1st Division, Modder River.
Mr. S. Jackson from Maitland to Port Elizabeth.
Mr. Jarvis for duty at Maitland.
Vet.-Captain Cooper has been placed on sick list.
Mr. Oliver to Cavalry Division, vice Vet.-Captain Cooper.
Mr. Aitken from Zee Kaw Vley to Stellenbosch, Remount Depôt.
Mr. Deacon from Stellenbosch to Maitland, for duty with R.A.
Mr. Webb to Arundel.
Vet.-Lieut. Sawyer on duty at East London purchasing yeomanry remounts.
Vet.-Lieut. England in charge of Base Veterinary Stores and Head quarters Staff vice Sawyer.
Vet.-Lieut. Williams in charge of troops, De Aar Junction.
Vet.-Lieut. Loughlin and Mr. Glasse in charge of Remount Depôt, De Aar.
Vet.-Captain Sharp and Mr. Laurie in charge Field Hospital, Orange River.

Mr. THOS. A. HUBAND goes with 1st Batt. Imperial Yeomanry on Monday next 26th.

Mr. STURGESS, the Government Veterinary Surgeon, will accompany the horses for the volunteer contingent from Ceylon to the Cape, and he will be accompanied by twenty horse-keepers in addition to the saddlers and farriers who have already arrived from India. Mr. Sturgess, after giving over charge of the horses, will stay in South Africa to study the Rinderpest question, and will be away from Ceylon for about three months.—*The Ceylon Observer.*

Another weak point in the service, particularly connected with the care of horses, has been brought out very prominently by recent departures. On the list of each transport carrying artillery or cavalry one invariably sees "Civil veterinary surgeon." The fact is that this important department of the Army is hopelessly undermanned. Apart from the colonial veterinary surgeons employed, 80 civilians have been engaged at home for the period of the war, and probably many more will be required, while nearly all the retired officers of the Army Veterinary Department are doing temporary duty, and most of them double duty. The engagement of so many civilians is not satisfactory, because, however competent they may be, they can have no experience of the special military duties required, nor can they exercise the necessary authority over the men with whom they have to deal. But the extraordinary thing is that all the time there are vacancies in the service for which no candidates are forthcoming. Competent men will no longer enter the Army Veterinary Department. Last year three examinations took place, in February, June, and September, at which only ten candidates presented themselves, and all were rejected. Can it be pretended that this is a satisfactory state of things? The plain reason is that the treatment of the department, which is the Cinderella of the service, is altogether behind the times and more and more repels the right men. No branch of the science and art of healing has developed so rapidly as veterinary medicine. It is daily becoming of greater importance as the intimate relation between the diseases of man and the lower animals is more clearly established, and the veterinary colleges have moved with the times. They now require the same standard of general education in their students as the other medical institutions. But the Army department ignores all this, and retains the invidious distinctions and disabilities—equally galling and senseless—which have been removed from other non-combatant branches of the service. Perhaps it is not for me to enter further into this subject, but I have been brought into contact with its results, and I am certain that the public, who cares only less for the welfare of the horses sent out than for that of the men, knows nothing of the extraordinary weakness of the veterinary department, and will have no sympathy with the antiquated and petty system of treatment that is its cause.—*The Times.*

CORRESPONDENCE.

THE APPEAL CASE AT BRIGHTON.

Dear Sir,

I am much obliged to you for publishing my letter *re* Mr. Callow. I have had a number of letters from members of the profession who think Mr. Callow has been hardly treated. The case is going for appeal, and I quite hope that we shall be able to win it.

Mr. Gerald Bloxsome, M.R.C.V.S., of 15 Goldsmid Road, Hove, has kindly consented to act as Secretary and Treasurer to the fund, and any subscriptions members of the profession incline to send should be sent to him, and he will see that they are properly dealt with.

The following gentlemen have kindly promised these amounts:—

	£	s.	d.
C. H. Delacherois, Bristol	1	1	0
Frank W. Garnett, Windermere	1	0	0
G. A. Banham, Cambridge	1	1	0
Green & Son, Dudley	1	1	0
J. W. Pritchard, Worthing		10	6
F. A. Ball, Ormskirk	1	0	0
H. V. Mossman, Folkingham		2	6
Charles F. Parsons, Brighton	1	0	0
Messrs. Burt	5	5	0
Gerald Bloxsome and Harold Sessions	5	5	0

One gentleman said I ought to have put my address in the letter, for subscribers to know where to send their money. I very much regret I did not, and it doubtless has prevented many members from writing.

Might I suggest that it would save the Hon. Sec. a lot of trouble if members would kindly send their subscriptions instead of a promise. Of course I quite recognise that last week it was not definitely decided to appeal, and therefore some of the letters naturally came without subscriptions; but as the work in connection with this matter will be voluntary we want to do it with as little expense as possible.—Faithfully yours,

HAROLD SESSIONS.

15 Goldsmid Road, Brighton.
February 21st.

P.S.—We will publish names of subscribers and amounts at intervals, if we may, in *The Record*.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs. John Young, J. Renfrew, E. Lawrance, W. J. Hatton, W. R. Davis, E. Wallis Hoare. H. Sessions, R. Ward, (Baltimore, U.S.A.) Col. W. B. Walters.
The Yorkshire Post, The Ceylon Observer.

Veterinary Societies—Addresses.

Alterations for this list must be duly notified by the Secretaries

BOMBAY V.M.A.
Pres Major Jas. Mills, M.R.C.V.S.
Vice-Pres: Vety.-Lieut. F. S. H. Baldrey, M.R.C.V.S. A.V.D.
N. D. Dhakmarvala, Esq., G.B.V.C.
S. N. R Ranina, Esq., G.B.V.C.
N. Narsingrao, Esq., G.B.V.C.
Hon. Sec. & Treas: V. E. Vakharia, Esq., G.B.V.C.

BORDER COUNTIES V.M.S.
Pres: Mr. James Lindsay, M.R.C.V.S., Dumfries
Hon. Sec. & Treas: Mr. H. Thompson, M.R.C.V.S., Aspatria
Meetings, Second Friday of Feb., June, and October

CALCUTTA V.M.A.
Pres: Mr. Greenhill, M.R.C.V.S.
Hon. Sec: Mr. T. Assheton Smith, 156 Dhurrumtollah

CENTRAL V.M.S.
Pres. Mr. Matthew Clarke, M.R.C.V.S., Wimbledon, S.W.
Hon. Sec: Mr E. Lionel Stroud, M.R.C.V.S.,
29 Spring-st., Hyde Park, W.
Meetings, First Thursday in each month, except August and September, 10 Red Lion Square, Holborn, at 7 p.m.

CENTRAL V.A. OF IRELAND.
Pres. Mr. W. A. Byrne, M.R.C.V.S., Roscommon
Hon. Sec. & Treas: Mr. M. J. Cleary, M.R.C.V.S., Mullingar

EASTERN COUNTIES V.M.A.
Pres: Mr. F. W. Wragg, F.R.C.V.S. Whitechapel, London, E.
Hon. Sec.: Mr. F. B. O. Taylor, M.R.C.V.S.
Weston Longville, Norwich
Meetings, Second Tuesday, Feb. and July

GLASGOW V.M.S.
Pres. Principal McCall.
Hon. Sec. Mr. R. G. Anderson.

VET. MED. ASSN. OF IRELAND.
Pres: Mr. M. Hedley, F.R.C.V.S.
Privy Council Office, Dublin Castle
Hon. Sec. Mr. J. McKenny, M.R.C.V.S.
116 Stephens-green-west, Dublin

LANCASHIRE V.M.A.
Pres: Mr. Jos. Abson, F.R.C.V.S., Norfolk-st, Sheffield
Hon. Sec: Mr. Harry Locke, M.R.C.V.S.
Grosvenor Street, Oxford Street., Manchester
Meetings, 1st Thursday in March, June, Sept., & Dec.

LINCOLNSHIRE V.M.S.
Pres: Mr. W. Gresswell, M.R.C.V.S., Peterborough
Hon. Sec: Mr. E. C. Russell, M.R.C.V.S., Grantham
Meetings, Second Thursday, Feb., June and October

MIDLAND COUNTIES V.M.A.
Pres: Mr. H. J. Dawes, F.R.C.V.S.,
Camden House, High St., West Bromwich
Hon. Sec: Mr. John Malcolm, F.R.C.V.S.
Holliday Street Wharf, Birmingham
Meetings, Second Friday in Feb. & May.
Second Tuesday in August, November

NATIONAL VET. ASSOCIATION.
Pres: Mr. M. Hedley, F.R.C.V.S.,
Privy Council Office, Dublin Castle
Sec: Mr. William Hunting, F.R.C.V.S.
Treas: Mr. F. W. Wragg, F.R.C.V.S., Whitechapel, London.

NATIONAL VETERINARY BENEVOLENT & MUTUAL DEFENCE SOCIETY.
Pres: Mr. Geo. Morgan, F.R.C.V.S., 95 Stanhope-st. Liverpool
Treas: Mr. E. Faulkner, F.R.C.V.S., Manchester
Hon. Sec: Mr. Sam. Locke, M.R.C.V.S.
Grosvenor Street, Oxford-st., Manchester

NEW SOUTH WALES V.M.A.
Pres: Mr. John Stewart, H. AND A.S.
Vice: Mr. John Pottie, H. and A.S.
Hon. Sec. & Treas: Mr. J. D. Stewart, M.R.C.V.S.

NORTH OF ENGLAND V.M.A.
Pres: Mr. J. W. T. Moore, F.R.C.V.S., Jarrow-on-Tyne.
Hon. Sec: Mr. H. S. Elphick, M.R.C.V.S.
Newgate-street, Newcastle-on-Tyne
Meetings, Third Friday, Feb., May, Aug. and Nov.

NORTH OF SCOTLAND V.M.S.
Pres: Mr. Adam Sievwright, M.R.C.V.S.,
Tarland, Aberdeenshire
Hon. Sec: Mr. William McPherson, M.R.C.V.S., Huntly

ONTARIO V.A.
Pres: Mr. G. L. Robson.
Sec: C. H. Sweetapple, Toronto.

ROYAL COUNTIES V.M.A.
Pres: Mr. S. H. Slocock, F.R.C.V.S., Hounslow
Hon. Sec: Mr. E. P. Owen, M.R.C.V.S., 98 High-st. Thame
Meetings, Last Friday, Feb., June and Nov.

ROYAL SCOTTISH V.S.
Pres: Mr. Reid, M.R C.V.S, Auchtermuchty.
Hon. Sec: Mr. W. D. Fairbairn, M.R.C.V.S., Cupar, Fifeshire

ROYAL VETERINARY COLLEGE M.A.
Pres: Prof. Hobday.
Hon. Sec: Mr. Clement E. Rix. R. V. Coll.
Assist. H.S. Mr. John Hobday, R.V.C., Camden Town, N.W.

SCOTTISH METROPOLITAN V.M.S.
Pres: Mr. Andrew Boyd, F.R.C.V.S., Melrose
Hon. Sec: Mr. P. Moir, M.R.C.V.S., 9 Kilmain Terr. Edinbro

SOUTH DURHAM AND NORTH YORKSHIRE V.M.A.
Pres.: Mr. J. H. Taylor, M.R.C.V.S., Darlington
Hon. Sec: Mr. W. Awde, F.R.C.V.S., Stockton-on-Tees.
Meetings, First Friday, Mar., June, Sept. and Dec.

SOUTHERN COUNTIES V.M.S.
Pres: Mr. J. B. Tutt, F.R.C.V.S, Winchester
Hon. Sec: Mr. C. Pack, M.R.C.V.S., Lymington, Hants
Meetings, Last Thursday, Mar., June and Sept.

SOUTH WALES AND MONMOUTHSHIRE V.M.A.
Pres: Mr. E. Sayer, M.R.C.V.S., Newport, Mon.
Hon Sec. Mr. D. G. Davies, M.R.C.V.S., High-st, Swansea
Treas. Mr. E. Sayer, M.R.C.V.S., Newport, Mon.
Meetings First Thursday in March, and Autumn.

WESTERN COUNTIES V.M.A.
Pres: Mr. W. Penhale, F.R.C.V.S., Barnstaple
Hon. Sec: Mr. John Dunstan, M.R.C.V.S. St. Mellion, Cornwall
Meetings, Third Thursday, March, July and November

WEST OF SCOTLAND V.M.A.
Pres: Dr. James McIntosh McCall, Vety. Coll. Glasgow
Hon. Sec. & Treas: Mr. J. Bishop, M.R.C.V.S.,
754 Garscube Road, Glasgow

YORKSHIRE V.M.A
Pres Mr. M. Robinson, M.R.C.V.S. Barnsley
Hon. Sec; Mr. A. McCarmick, M.R.C.V.S., Kirkstall-rd, Leeds
Meetings, Last Friday in Jan., April, and October.